

### **Abstract**

An apparatus comprises a transmitter, a receiver, an antenna and a signal cancellation circuit. The transmitter is configured to send a transmitter signal associated with a frequency. The receiver is associated with the frequency. The antenna is coupled to the transmitter and the receiver. The signal cancellation circuit is coupled to the transmitter, the receiver and the antenna. The signal cancellation circuit is configured to phase shift a first portion of the transmitter signal to produce a phase-shifted signal. The signal cancellation circuit is configured to combine the phase-shifted signal with a second portion of the transmitter signal to produce a combined signal. The second portion of the transmitter signal is associated with a reflection of a third portion of the transmitter signal from the antenna. The first portion, the second portion and the third portion of the transmitter signal are different from each other.